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EXAMINER
TAYONG, HELENE E

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/734,405	PARK ET AL.
	Examiner	Art Unit	
	Helene Tayong	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *21 December 2007*.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1,3-6 and 8-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1,3-6 and 8-10* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *11 December 2003* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to the amendment filed on 12/21/07.

Claims 1-10 were examined and reported in the Office Action. Claims 1-10 are rejected.

Claims 1 and 6 are amended. Claims 2 and 7 have been cancelled. Claims 1, 3-6 and

8-10 are pending in this application and have been considered below.

Response to Arguments

2.   Applicant's arguments with respect to rejection of claims 1-10 rejected under 35

U.S.C. § 102(e) as being anticipated by Weiss, U.S. Patent Application Publication No.

2002/0140867 have been considered but are moot in view of the new ground(s) of

rejection because of amendments.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

5.   Claims1,3-5 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

(1) In claim 1, lines 16-17 and lines 20-21, recites the limitations, "input values"

and "input signals", it is unclear if these input values and input signals are the same.

(2) In claim 1, lines 16-17, recites the limitation, "the memory". There is

insufficient antecedent basis for this limitation in the claim unless a memory was

described in the preceding text of claim 1. This problem could be corrected by replacing

the text "the memory" with "a memory".

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1, 3-6, 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Weiss (US 20020140867 see IDS) in view of Gaddam et al (US 6744822).

(1) with regards to claim 1;

Weiss in (figs. 1 and 5) discloses a terrestrial digital broadcasting system (pg.1,

[0001], lines 2-5), comprising:

a broadcasting station (10) for multiplexing video, voice and additional signals

(11) into transport stream (TS) (12) and transmitting the TS (12) to the transmitting

stations (20) (pg. 5, [0076]); and

a transmitting stations (17) for receiving the TS (12) and broadcasting the TS

(12) to receiving stations (21) through a single frequency network (20) (pg. 5, [0076]),

wherein the broadcasting station (10) includes:

a transmission synchronization means (16) for inserting a field synchronization

header to the TS in a predetermined data field period N, and wherein the transmitting

stations include (fig. 5, 16 and pg.4, [0075], lines 3-6 , pg. 9, [0106], lines 7-14):

a transmission synchronization detecting means (fig. 6, 51) for synchronizing the

TS transmitted from the broadcasting station based on the field synchronization header

(pg.5, [0077]);

and a trellis encoding means (fig. 6, 36 and fig. 12) for generating initialization

symbols of a predetermined length in a predetermined data field period M and

synchronizing the TS outputted to the receiving stations (pg.5, [0078] and page 11,

[0119]-[0120]).

Weiss discloses trellis encoding means (fig. 6, 36 and fig. 12, pg. 11, [0119]-

[0120]), a memory (31) and a precoder (36), but Weiss does not disclose wherein the

trellis encoding means includes:

(a) a first switching unit for initializing output values of a trellis coded modulation

(TCM) encoder and the memory by performing switching to input values stored in the

memory of the TCM encoder instead of input signals of the TCM encoder every M

period ; and

(b) a second switching unit for initializing output values of a precoder and the

memory by performing switching to input values stored in the memory of the precoder

instead of input signals of the precoder every M period.

(i) with regards to item (a) above;

However, Gaddam et al in (fig.3) discloses an example block diagram of a

switchable 1/3-2/3 trellis encoder (300) used to selectively encode each data segment

dependent upon the state of the HD/SD control (305) (col. 4, lines 19-58 and col. 6,

lines 30-36).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the switch of Gaddam et al in the encoder of Weiss in order to switch initializing output values of a trellis coded modulation (TCM) encoder and the memory by performing switching to input values stored in the memory of the TCM encoder instead of input signals of the TCM encoder every M period. The motivation to incorporate the switch of Gaddam et al in the encoder of Weiss would be for error correction.

(ii) with regards to item (b) above;

However, Gaddam et al in (fig.3) discloses an example block diagram of a switchable 1/3-2/3 trellis encoder 300 used to selectively encode each data segment dependent upon the state of the HD/SD control 305 (col. 4, lines 19-58 and col. 6, lines 30-36). In (col. 8, lines 31-35) a switch that alternately routes the outputs of the encoder to a constant map that provides the first mapping gain and the second mapping gain in dependence upon the routing of the outputs is disclosed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the switch of Gaddam et al in the encoder of Weiss in order for initializing output values of a precoder and the memory by performing switching to input values stored in the memory of the precoder instead of input signals of the precoder every M period. The motivation to incorporate the switch of Gaddam et al in the encoder of Weiss would be for error correction.

(2) with regards to claim 3;

Weiss further discloses wherein the field synchronization header is acquired by

reversing a first segment header of data fields of an N period on a bit basis (pg. 5,

[0077], lines 18-22 and pg.6, [0086], lines16-21).

(3) with regards to claim 4;

Weiss further discloses wherein the transmission synchronization detecting

means recognizes that valid TS is being received, if a field synchronization header of a

$B8_{16}$ value is detected in the first segment header and the value of 47_{16} is detected in

the segment headers of the other data fields (fig. 11,84, pg. 10, [0112], lines 1-18 and

pg. 11, [0116], lines 12-16).

(4) with regards to claim 5;

Weiss further discloses wherein the N value is adjusted based on the

communication channel environment between the broadcasting station and the

transmitting stations, and the M value is adjusted based on the communication channel

environment between the broadcasting station and the transmitting stations (pg.1,

[0003] - [0004] and pg.2, [0012]).

(5) with regards to claim 6;

Weiss in (figs. 1 and 5) discloses a terrestrial digital broadcasting method using a

single frequency network (pg.1, [0001], lines 2-5), comprising the steps of:

a) inserting a field synchronization header to transport stream (TS) transmitted to

a plurality of transmitting stations in a predetermined data field period N in a

broadcasting station (fig. 5, 16 and pg.4, [0075], lines 3-6 , pg. 9, [0106], lines 7-14);

b) detecting (fig. 6, 51) the field synchronization header and synchronizing

starting points of the TS inputted to each transmitting station in the transmitting stations

(page 5, [0077]);

c) synchronizing the TS outputted to receiving stations by generating initialization

symbols of a predetermined length every predetermined data field period M with respect

to the inputted signal (fig. 6, 36 and col. 5, [0078]),

d) broadcasting the synchronized TS (fig. 1 and page 5, [0077]) to the receiving

stations(fig. 2, 25).

Weiss discloses trellis encoding means (fig. 6, 36 and fig. 12, pg. 11, [0119]-

[0120]), a memory (31) and a precoder (36), but Weiss does not disclose wherein the

initialization symbols are generated by performing switching to input values stored in a

memory of a trellis coded modulation (TCM) encoder and a precoder instead of the

inputted signal; and

(i) with regards to item (a) above;

However, Gaddam et al in (fig.3) discloses an example block diagram of a

switchable 1/3-2/3 trellis encoder 300 used to selectively encode each data segment

dependent upon the state of the HD/SD control 305 (col. 4, lines 19-58 and col. 6, lines

30-36).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the switch of Gaddam et al in the encoder of Weiss

in order to switch initialization symbols that were generated by performing switching to

input values stored in a memory of a trellis coded modulation (TCM) encoder and a

precoder instead of the inputted signal. The motivation to incorporate the switch of

Gaddam et al in the encoder of Weiss would be for error correction.

(6) with regards to claim 8;

Weiss further discloses wherein the field synchronization header is acquired by

reversing a first segment header of data fields of an N period on a bit basis (pg. 5,

[0077], lines 18-22] and pg.6, [0086], lines16-21).

(7) with regards to claim 9;

Weiss further discloses wherein the transmission synchronization detecting

means recognizes that valid TS is being received, if a field synchronization header of a

$B8_{16}$ value is detected in the first segment header and the value of 47_{16} is detected in

the segment headers of the other data fields (fig. 11,84, pg. 10, [0112], lines 1-18 and

pg. 11, [0116], lines 12-16).

(8) with regards to claim10;

Weiss further discloses wherein the N value is adjusted based on the

communication channel environment between the broadcasting station and the

transmitting stations, and the M value is adjusted based on the communication channel

environment between the broadcasting station and the transmitting stations (pg.1,

[0003] - [0004] and pg.2, [0012]).

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helene Tayong whose telephone number is 571-270-1675. The examiner can normally be reached on Monday-Friday 8:00 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Helene Tayong/
Examiner, Art Unit 2611

3/6/08
/Shuwang Liu/
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